

Application No. 09/478,508
Amendment dated November 4, 2003
Reply to Office Action of July 11, 2003

REMARKS

Claim 17 is pending in this application. Claim 16 has been canceled and claim 17 has been amended. Reconsideration of the rejections in view of these amendments and the following remarks is respectfully requested.

Claim Rejection under 35 U.S.C. §112

Claim 17 stands rejected under 35 U.S.C. §112, second paragraph, as being indefinite.

The Examiner alleges that in claim 17 there is insufficient literal antecedent basis for language “the bump to be formed thereon.”

Claim 17 has been amended to overcome the rejection.

Claim Rejection under 35 U.S.C. §102

Claim 16 stands rejected under 35 U.S.C. §102(b) as being anticipated by Mori et al. (U.S. Patent No. 5,821,627).

Claim 16 has been canceled and the rejection is now moot.

Claim Rejection under 35 U.S.C. §103

Claim 17 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Mori et al.

Applicants respectfully traverse this rejection.

Claim 17 has been amended into independent form.

The Examiner alleged that although Mori et al. does not appear to explicitly teach the particular claimed layer relative weight, it would have been an obvious matter of design choice to

choose this particular relative weight because the Applicants have not disclosed that the weight is for a particular unobvious purpose, produces an unexpected result, or is otherwise critical.

The present specification, however, describes, at page 16, line 37 to page 17, line 13, as follows:

In the protruded electrode forming step, the reflow process (heat treatment) is implemented. However, since the fourth conductive metal layer 34 is made of a material which can be easily alloyed with the bump 35, there is a risk that the fourth conductive metal layer 34 dissolves and alloys with the bump 35.

However, in the present embodiment, the weight of the fourth conductive metal layer 34 is less than 2% (weight percentage) of the weight of the bump 35. Therefore, even if the fourth conductive metal layer 34 is entirely alloyed with the bump 35, the amount of the fourth conductive metal layer 34 in the bump 35 is considerably small. Thus, the degradation of the bump 35 can be prevented.

Thus, the present specification discloses that in order to prevent a degradation of a bump (second protruded electrode), the weight of the fourth (uppermost conductive) layer should be less than 2 weight % of the weight of the bump, so that even if the fourth layer is entirely alloyed with the bump, the amount of the fourth conductive metal layer in the bump is considerably small and degradation of the bump would be prevented. These features are not expected from the disclosure of Mori et al. For at least these reasons, claim 17 patentably distinguishes over Mori et al.

Thus, the 35 U.S.C. §103(a) rejection should be withdrawn.

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It is submitted that nothing in the cited references, taken either alone or in combination, teaches or suggests all the features recited in each claim of the present invention. Thus all pending claims are in condition for allowance. Reconsideration of the rejections, withdrawal of the rejections and an early issue of a Notice of Allowance are earnestly solicited.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. The fees for such an extension or any other fees which may be due with respect to this paper, may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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